

## CLAIMS

We claim:

- 1 1. A method for suppressing accelerated repopulation of cancer cells during radiation  
2 therapy, comprising the step of  
3 delivering to cancer cells an effective dose of an expressible nucleic acid molecule  
4 encoding a mutant epidermal growth factor receptor.
- 1 2. The method of claim 1 wherein said mutant epidermal growth factor receptor is EGFR-  
2 CD533.
- 1 3. The method of claim 1 wherein said expressible nucleic acid molecule is a DNA  
2 molecule.
- 1 4. The method of claim 1 wherein said expressible nucleic acid molecule is in an expression  
2 cassette.
- 1 5. The method of claim 4 wherein said expression cassette is Ad-EGFR-CD533.
- 1 6. The method of claim 1 wherein said expressible nucleic acid molecule is an RNA  
2 molecule.
- 1 7. The method of claim 1 wherein said step of delivering is accomplished by administration  
2 to a patient in need thereof.
- 1 8. The method of claim 7 wherein said administration is oral.
- 1 9. The method of claim 7 wherein said administration is systemic.
- 1 10. The method of claim 7 wherein said administration is *in situ* at the cancer locus.

1 11. The method of claim 7 wherein said administration is carried out via a method selected  
2 from the group consisting of administering a viral vector, administering liposomes, and  
3 direct injection of nucleic acid.

1 12. The method of claim 1 wherein said cancer cells are mammary cancer cells.

1 13. The method of claim 1 wherein said cancer cells are glioma cells.

1 14. The method of claim 1 wherein said cancer cells express epidermal growth factor  
2 receptor.

1 15. A therapeutic agent comprising,  
2 an effective dose of an expressible nucleic acid molecule encoding a mutant  
3 epidermal growth factor receptor and a carrier.

1 16. The therapeutic agent of claim 15, wherein said mutant epidermal growth factor receptor  
2 is EGFR-CD533.

1 17. The therapeutic agent of claim 15, wherein said expressible nucleic acid molecule is in  
2 an expression cassette.

1 18. The therapeutic agent of claim 17, wherein said expression cassette is Ad-EGFR-  
2 CD533.

1 19. A method for radiosensitizing cancer cells, comprising the step of  
2 delivering to cancer cells an effective dose of an expressible nucleic acid molecule  
3 encoding a mutant epidermal growth factor receptor.

1 20. The method of claim 19 wherein said mutant epidermal growth factor receptor is EGFR-  
2 CD533.

- 1 21. The method of claim 19 wherein said expressible nucleic acid molecule is a DNA  
2 molecule.
- 1 22. The method of claim 19 wherein said expressible nucleic acid molecule is in an  
2 expression cassette.
- 1 23. The method of claim 22 wherein said expression cassette is Ad-EGFR-CD533.
- 1 24. The method of claim 19 wherein said expressible nucleic acid molecule is an RNA  
2 molecule.
- 1 25. The method of claim 19 wherein said step of delivering is accomplished by  
2 administration to a patient in need thereof.
- 1 26. The method of claim 25 wherein said administration is oral.
- 1 27. The method of claim 25 wherein said administration is systemic.
- 1 28. The method of claim 25 wherein said administration is *in situ* at the cancer locus.
- 1 29. The method of claim 25 wherein said administration is carried out via a method selected  
2 from the group consisting of administering a viral vector, administering liposomes, and  
3 direct injection of nucleic acid.
- 1 30. The method of claim 19 wherein said cancer cells are mammary cancer cells.
- 1 31. The method of claim 19 wherein said cancer cells are glioma cells.
- 1 32. The method of claim 19 wherein said cancer cells express epidermal growth factor  
2 receptor.